



National Association of Remedial Project Managers

Annual Training Program



May 24-28, 2010 • Potomac Yard • Arlington, Virginia

USEPA Region 10

PRPs Approach to Greener Remediation in the LDW Site RI/FS

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Site Status

- ◆ Lower Duwamish: large urban River/Sediment Site in Seattle;
- ◆ Major PRPs (Boeing, Port of Seattle, City, County) doing RI/FS and early actions in 4 subareas;
- ◆ EPA recently commented on latest draft of FS

Pollution Sources

Storm water runoff from:

- Roads
- Residential yards
- Industrial/manufacturing operations

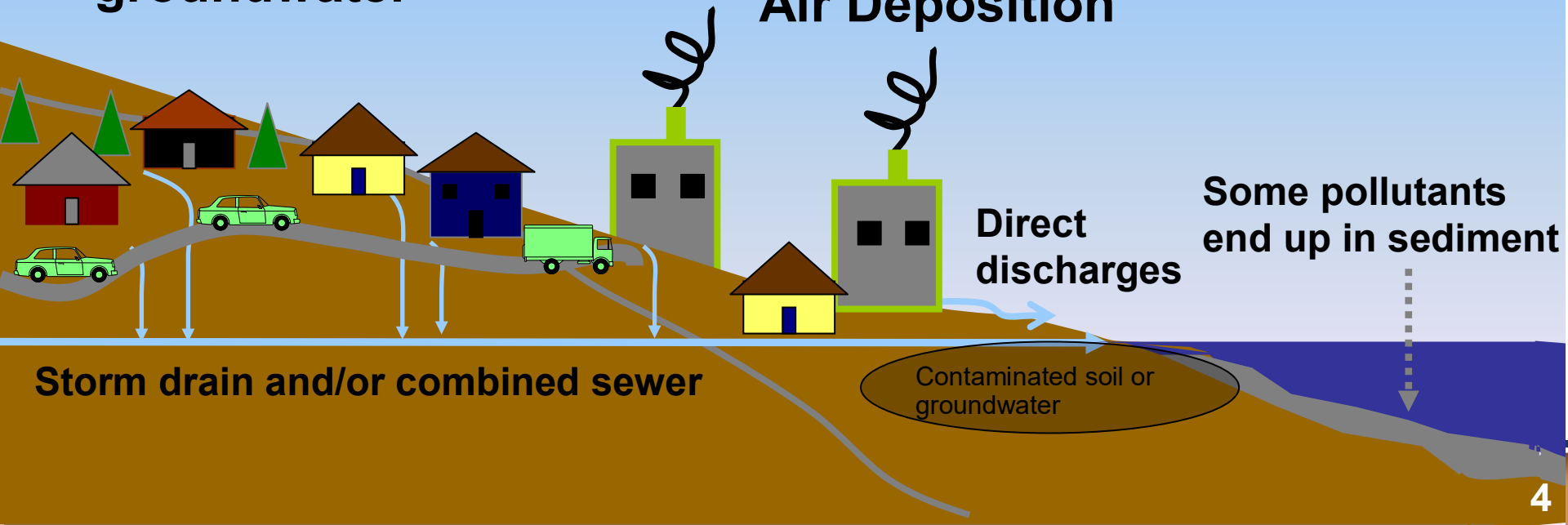
Contaminated soil or groundwater

Combined sewer system overflows:

- Storm water runoff
- Municipal sewage/wastewater
- Industrial wastewater

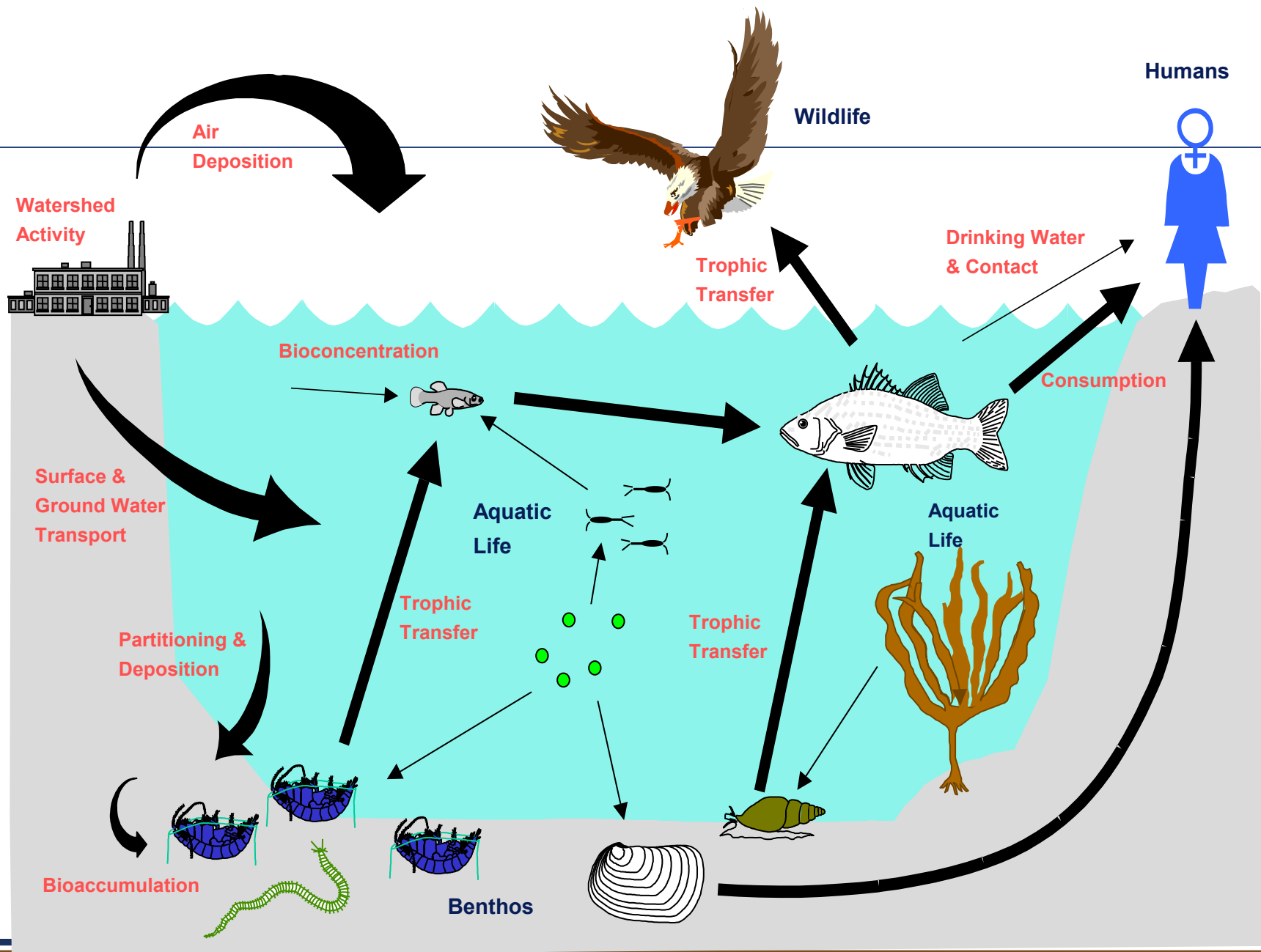
Direct Discharges

Air Deposition



Primary COCs

- ◆ PCBs,
- ◆ Arsenic,
- ◆ CPAHs,
- ◆ Dioxins/Furans



LDW Conceptual Site Model for Human Health Risk Assessment

- ◆ Beach play/work/
commercial net fishing
 - dermal contact, incidental ingestion of sediments
- ◆ Consumption of fish and shellfish
 - Adult tribal scenario
 - Child tribal scenario
 - Asian Pacific Islander scenario



Remedial Technology Options

- ◆ Dredging and Offsite Disposal;
- ◆ Capping;
- ◆ Monitored Natural Recovery
- ◆ Alternatives vary as to how much to rely on each.
- ◆ All alternatives require source control; most also need ICs and O&M.

Preferred Alternative

- ◆ Likely some combination of the 3 main technologies
- ◆ Real question is where/how much to employ each;
- ◆ PRPs prefer MNR for as much of the Site as possible after early actions;
- ◆ The larger the dredged footprint, the more COCs removed from the environment. But, PRPs argue: the higher the cost, greater short-term impacts and minimal time or risk-reduction savings.

PRPs Draft FS includes “sustainability metrics” under Short-Term Effectiveness

- ◆ PRPs describe sustainability metrics as “footprints of remedial alternatives, e.g., energy and material consumption, GHG, and carbon footprint per EPA guidance”
- ◆ PRPs conclude dredge + off-site disposal has largest carbon footprint, GHG, impacts on and risk to environment, workers and communities, followed by capping then MNR. Thus they rate MNR much higher in terms of Short-Term Effectiveness (STE) and dredging much lower.
- ◆ PRPs failed to discuss ways to mitigate impacts despite Guidance, R10 C&G policy and repeated comments

PRPs Also Using STE Concerns to Drive Protectiveness Evaluation

- ◆ PRPs also carry their “sustainability metrics” heavily into Overall Protectiveness of PH&E, and justify based on 2nd sentence of NCP 300.430(e)(9)(3)[A] :
 - “Overall protection of human health and the environment draws on the assessments of other evaluation criteria, especially long-term effectiveness and permanence, short-term effectiveness, and compliance with ARARs.”;
- ◆ We counter with the 1st sentence:
 - ““Overall Protection of Public Health and the Environment” relates to the protection of PH&E “from unacceptable risks posed by hazardous substances, pollutants, or contaminants present at the site...””.

Per EPA AA for OSWER's 8/27/09

"Principles for Greener Cleanups" Memo

- ◆ EPA does not consider cleanups that do not satisfy threshold requirements for protectiveness and site-specific cleanup objectives to be “greener”.
- ◆ Policy not intended to trade cleanup program objectives for other environmental objectives.
- ◆ “EPA will select the alternative that meets the threshold criteria ...and provides the best balance of the remaining criteria, and then seek to minimize the environmental footprint of the selected cleanup, by using equipment that emits less particulate matter into the air, sizing equipment appropriately to avoid wasted energy, water, and material, and using renewable energy or recycled material to the extent possible.
- ◆ Point is to make selected remedies greener, not to use GHG, etc. to drive remedy selection

Mitigation Needs to Be Addressed Well in FS per Policy, Guidance, NCP

- ◆ We know much more about mitigation options and ways to make cleanups greener than we used to and are learning more all the time;
- ◆ This is important information to develop and document well in the FS;
- ◆ Particularly important to factor into remedial design and action after remedy selection.

OSRTI working on GR Guidance or Policy Memo

- ◆ Generally good news, such guidance would help, we look forward to reviewing and commenting on draft
- ◆ We agree with them on “no 10th criteria” and emphasizing that where short-term impacts are identified, identifying and documenting ways to mitigate impacts is essential in FS, important to inform RD;
- ◆ However, it would be troubling if HQ comes out in favor of considering GR under multiple criteria (not just STE). R10 does not support that approach as it is likely to bias decision-making;

R10 Strongly Recommends:

- ◆ Limit discussion of GHG & other impacts to Short Term Effectiveness, which is the appropriate place to identify potential environmental effects and impacts associated with alternatives and how to mitigate them
- ◆ Emphasize that discussing ways to mitigate impacts is essential in FS, important to inform RD;
- ◆ STE should have no more (or less) weight than it has had to date & should not be major factor in re Protectiveness (except in extraordinary circumstances);
- ◆ Focus on actively mitigating or reducing impacts and otherwise making remediation greener as part of RD and later O&M, not remedy selection.